



INSTRUCTIONS

This manual contains important warnings and information.
READ AND KEEP FOR REFERENCE.

ELECTRIC, 120 VAC

ULTRA[®] AIRLESS PAINT SPRAYER

Circuit Board Replacement

GENERAL REPAIR INFORMATION

WARNING



INJECTION HAZARD

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray tip.

CAUTION

To reduce the risk of a pressure control malfunction:

- Use needle nose pliers to disconnect a wire.
- Mate wire connectors properly. Center the flat blade of the insulated male connector in the wrap-around blade of the female connector.
- Route wires through the center of the U-shaped bourdon tube to avoid interference with the movement of the bourdon tube. Avoid interference between the circuit board, the pressure control and cover.

Pressure Relief Procedure

1. Engage the gun safety latch.
2. Turn the ON/OFF switch to OFF.
3. Unplug the power supply cord.
4. Disengage the gun safety latch. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.
5. Engage the gun safety latch.
6. Open the pressure drain valve. Leave the pressure drain valve open until ready to spray again.

If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Now clear the tip or hose obstruction.

Tool List

Phillips screwdriver	Adjustable wrench
Mineral spirits	3/8 in. nut driver or socket wrench
0 – 5000 psi, oil-filled test gauge, 102-814	7/16 in. open end wrench
New 3000 psi (210 bar) spray hose 223-541	1/4 in. open end wrench
Needle nose pliers	5/16 in. hex key wrench
Pail of clean water	3/8 in. open end wrench

Test your repair before regular operation of the sprayer to be sure the problem is corrected.

WARNING

To reduce the risk of serious injury, including electric shock, Do not touch any moving or electrical parts with your fingers or a tool while inspecting the repair.

Shut off and unplug the sprayer when you complete the inspection.

Reinstall all covers, gaskets, screws and washers before operating the sprayer.

Circuit Board Replacement

⚠ WARNING

To reduce the risk of serious injury, follow the **Pressure Relief Procedure** on page 1 whenever you are instructed to relieve pressure.

NOTE: Read the **GENERAL REPAIR INFORMATION** on page 1 before doing this procedure.

NOTE: Refer to Fig. 1 and 2 for this procedure.

1. Relieve pressure.
2. Remove the pressure control cover.
3. Turn the pressure control knob to the minimum setting to release spring tension on the board. Check to be sure only three or four threads of the pressure control knob shaft are exposed below the pressure adjustment nut (S). Loosen the nut, if necessary.

⚠ CAUTION

Step 2 is essential to reduce the risk of damaging the circuit board while removing or installing it.

4. Disconnect all seven wires from the board. Pay close attention to where connections are made.

5. Pull out the plastic-tipped pin (330). Push the bottom of the circuit board (72) toward the wall of the pressure control and carefully slide the board out.
6. Reinstall the new board in the pressure control at the same angle as it was removed.
7. Reconnect all wires. Ease the pin (330) into the retainer.
8. Perform steps 7 through 18 of the **Pressure Control Adjustment** on page 3.

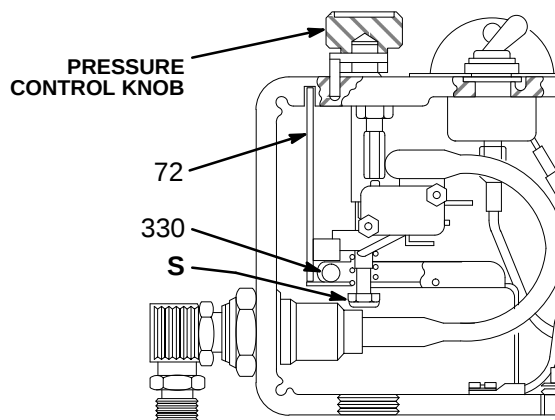


Fig. 1

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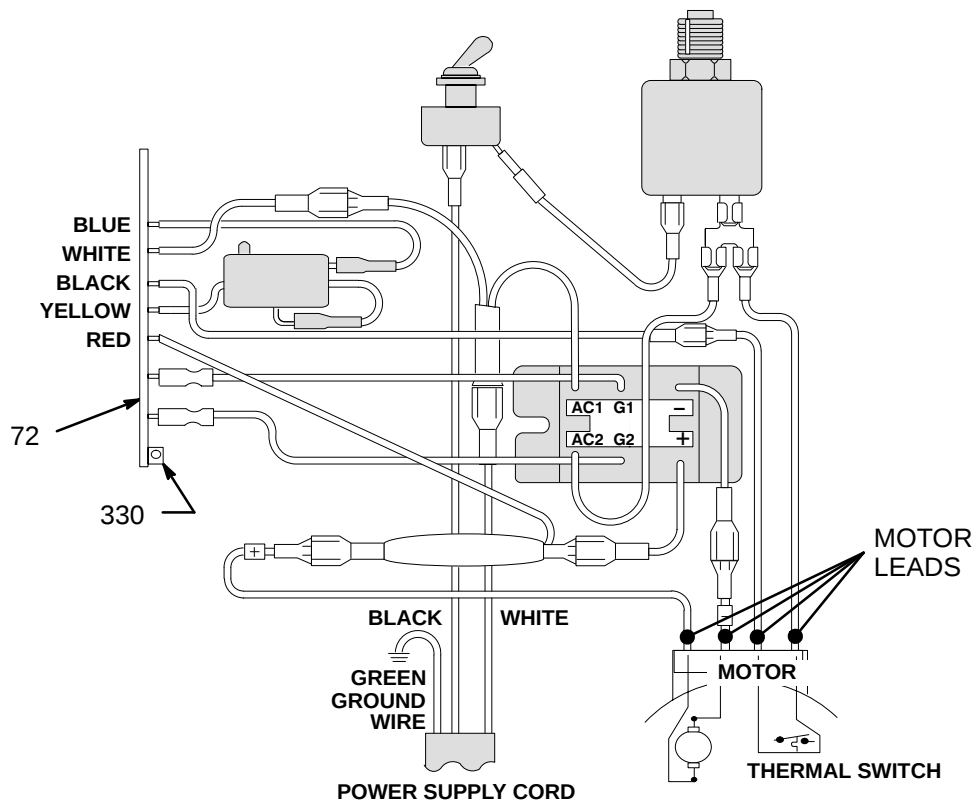


Fig. 2

Pressure Control Adjustment

WARNING

USE EXTREME CAUTION WHEN PERFORMING THIS ADJUSTMENT PROCEDURE to reduce the risk of a fluid injection injury or other serious bodily injury which can result from component rupture, electric shock, fire, explosion, or moving parts.

This procedure sets the sprayer to 2750 psi (195 bar) **MAXIMUM WORKING PRESSURE** and sets the over-pressurization switch (microswitch) to approximately 3600 psi (242 bar).

Perform this procedure whenever the pressure control assembly is removed and reinstalled or replaced, or a new circuit board is installed.

Improper adjustment can cause the sprayer to over-pressurize and result in component rupture, fire or explosion. It may also prevent the sprayer from obtaining the maximum working pressure, resulting in poor sprayer performance.

NEVER try to increase the sprayer's maximum working pressure of 2750 psi (195 bar) by performing these adjustments in any other way. Normal operation of the sprayer at higher pressures may result in component rupture, fire or explosion. To perform this adjustment, however, the sprayer pressure must be *temporarily* increased above the normal working pressure.

Use a *new* 50 ft (15.2 m) spray hose rated for at least 2750 psi (195 bar) **MAXIMUM WORKING PRESSURE**. A used, under-rated hose could develop a high pressure leak or rupture.

WARNING

To reduce the risk of serious injury, follow the illustrated **Pressure Relief Procedure** warning on page 1 whenever you are instructed to relieve pressure.

NOTE: Read the **GENERAL REPAIR INFORMATION** on page 1 before doing this procedure.

1. Relieve pressure.
2. See the above list of tools and equipment needed. Remove the plug (A) from the top of the fluid filter and install the fluid-filled pressure gauge. See Fig 3. Connect the gun to the **new** test hose and connect the hose to the sprayer outlet.
3. Remove the pressure control cover (62).
4. Place the pump suction tube in a pail of clean water.
5. Be sure the gun safety latch is engaged.
6. Plug in the sprayer.

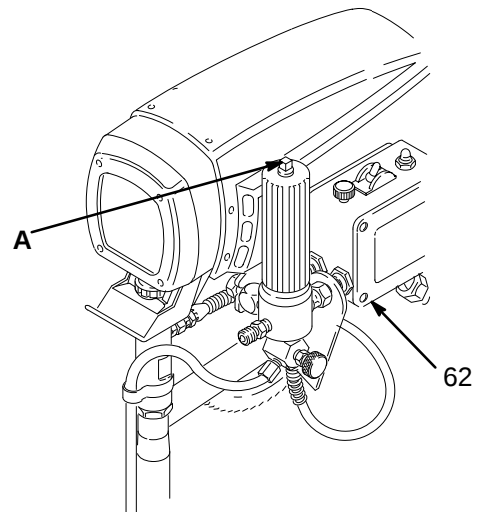


Fig. 3

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7. Turn the pressure control knob (B) to the *minimum* setting (fully counterclockwise), and turn the sprayer ON. **THE DISPLACEMENT PUMP SHOULD NOT CYCLE**

If it does cycle, remove the plug (15) from the bottom of the pressure control. Insert a 3/8 in. nut driver through the opening, and unscrew the pressure adjustment nut (T) just until the sprayer stops running.

Adjust the Overpressurization Switch

8. With the spray gun triggered, **slowly** turn the pressure control knob clockwise just until the sprayer starts. Prime the pump and hose.

Pressure Control Adjustment

9. Slowly turn the pressure control knob to the maximum setting. While watching the red light on the circuit board and the pressure gauge, turn the nut (T) **slowly** to increase pressure until the red light goes out **and** the gauge reads between 3400 – 3800 psi (238 – 266 bar).

If the red light does not go out by 3800 psi (266 bar), loosen the nut (P) and adjust the stud (Q) until the light goes out.

If the red light goes out before 3400 psi (238 bar), loosen the nut (P) and adjust the stud (Q) until the light goes out between 3400 – 3800 psi (238 – 266 bar).

10. Tighten the nut (P) if it was loosened in Step 9.
11. Trigger the gun to relieve pressure. Release the trigger and engage the safety latch. Repeat Step 9 to verify your results.
12. Install the pressure control cover.

Maximum Working Pressure Adjustment

13. Turn the sprayer OFF. Disengage the gun safety latch. Trigger the gun into a grounded waste container until pressure is relieved. Engage the gun safety latch.
14. Use the 3/8 in. nut driver to turn the pressure adjustment nut (T) counterclockwise one full turn.

15. With the pressure control knob at the *minimum* setting, turn the sprayer ON.
16. **Slowly** turn the pressure control knob (B) clockwise to the maximum setting and hold it there. Use a 3/8 in. nut driver or socket wrench to slowly turn the pressure adjustment nut (T) clockwise until the gauge reads EXACTLY 2750 psi (195 bar).
17. Turn the pressure control knob to the minimum setting. Release the gun safety latch and trigger the gun into a grounded waste container until pressure is relieved. Engage the gun safety latch. Slowly increase the pressure to verify that the maximum working pressure is set at 2750 psi (195 bar).

⚠ CAUTION

To prevent pump corrosion, flush the water out of the pump, hose and gun with mineral spirits. Be sure to close the drain valve, first. Use the lowest pressure necessary to flush. Relieve pressure. Leave the mineral spirits in the pump to protect it until you are ready to spray again.

18. Install the plug (15) in the bottom of the pressure control. Remove the gauge assembly and reinstall the plug. Flush out the water with mineral spirits.

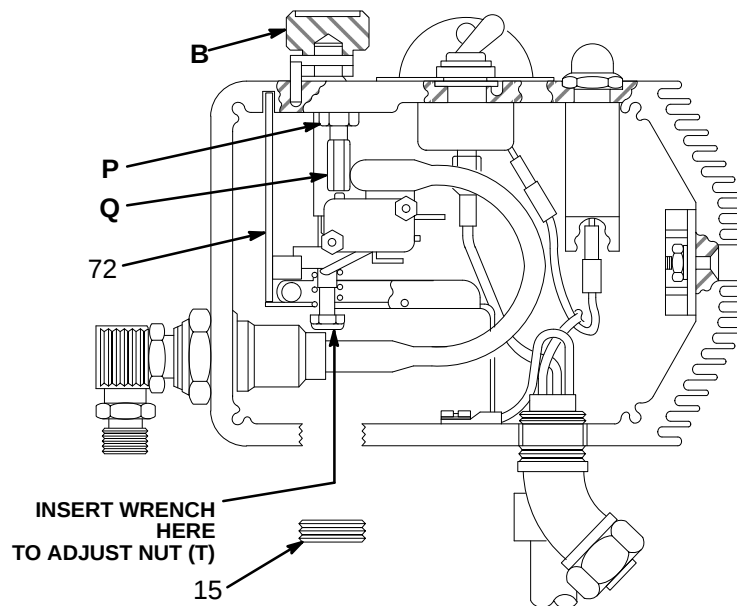


Fig. 4

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